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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,633	09/21/2006	Kunio Yamane	Q96939	1928
23373	7590	12/12/2008	EXAMINER	
SUGHRUE MION, PLLC			TAYLOR II, JAMES W	
2100 PENNSYLVANIA AVENUE, N.W.				
SUITE 800			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20037			1796	
			MAIL DATE	DELIVERY MODE
			12/12/2008	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/593,633	YAMANE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	James W. Taylor II	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 08 September 2008.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-9 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-9 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 21 September 2006 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ .                                    |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____.   | 6) <input type="checkbox"/> Other: _____ .                        |

## **DETAILED ACTION**

1. All outstanding objections and rejections, except those maintained below, are withdrawn in light of applicant's amendment filed on September 8, 2008.
2. The text of those sections of Title 35 U.S. Code not included in this office action can be found in a prior office action.
3. The new grounds of rejection set forth below are not necessitated by amendment, and therefore this rejection is properly made NON-FINAL.

### ***Oath/Declaration***

4. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the citizenship of each inventor.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitation "or said diallylphthalate prepolymer" does not have adequate basis in the specification as originally filed because there is no support to exclude the prepolymer. The new matter issue arises because excluding the prepolymer as such would be tantamount to including numerous crosslinkers which are outside the scope of the few crosslinkers mentioned in paragraph 17 of the specification.

7. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling general crosslinkers, does not reasonably provide enablement for a crosslinking agent other than diallylphthalate monomer. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make any use the invention commensurate in scope with these claims.

8. Case law holds that applicant's specification must be "commensurately enabling [regarding the scope of the claims]." See *Ex Parte Kung*, 17 USPQ2d 1545, 1547 (Bd. Pat. Appl. Inter. 1989). Otherwise **undue experimentation** would be involved in determining how to practice and use applicant's invention. The test for undue experimentation as to whether or not all limitations within the scope of claim 2 can be

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used as claimed and whether claim 2 meets the test stated in *Ex parte Forman*, 230 USPQ 546, 547 (Bd. Pat. Appl. Inter. 1986) and *In re Wands*, 8 USPQ2d 1400 (Fed. Cir. 1988). Upon applying this test to claim s, it is believed that undue experimentation **would** be required because:

(a) *The quantity of experimentation necessary is great* since the specification fails to disclose non-diallylphthalate crosslinking agents commensurate in scope with the claimed subject matter. This exclusionary limitation opens up the scope of the claim to numerous crosslinkers outside the scope of the crosslinkers in paragraph 17. The word "etc" in the examples listed in paragraph 17 does not inform as to just what other crosslinkers for which the Applicant is enabled.

(b) There is **no direction or guidance presented** for selecting any type of non-diallylphthalate crosslinking agent.

(c) There is an **absence of working examples** concerning making the composition comprising any type of non-diallylphthalate crosslinking agent.

9. In light of the above factors, it is seen that undue experimentation would be necessary to make and use the invention of claim 2.

#### ***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 1 and 4-9 are rejected under 35 U.S.C. 35 U.S.C. 102(e) as being anticipated by Daichou *et alii* (US 2004/0085772 A1).

12. Daichou teaches a lamp reflector (ti.), comprising a bulk molding compound ("BCM") which comprises unsaturated polyester, crosslinking agent, and glass fiber (par. 2). Example 2 teaches 14 parts polyester ("IPA/Man/PG" and "PMMA"), 10 parts crosslinking agent ("styrene"), 15 parts hollow glass spheres, and 45 parts inorganic filler ("calcium carbonate") (tbl. 1). Further, Daichou teaches that the pressure at which the hollow spheres will fail is 40 MPa (par. 42). The examiner calculates that the pressure resistance for the hollow glass spheres of the instant invention is  $4,000 \cdot 10^4$  N/m<sup>2</sup>.

13. It is noted that example 2 comprises reinforcing fibers. However, the applicants state in the instant specification:

"In the unsaturated polyester resin composition of the present invention, if necessary, low constrictive agents, curing agents, mole lubricants, thickeners, fiber reinforcements, pigments, viscosity decreasing agents, etc. may be used together with the above ingredients [which comprises unsaturated polyester, crosslinker, inorganic filler, and hollow glass fiber]. If these ingredients are used, each of the ingredients which are normally used according to various purposes." (par. 25, emphasis added)

It is clear that the applicants intend fiber reinforcements not to be calculated as "inorganic filler" for their claims' limitations.

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14. Regarding claim 4, the calcium carbonate inorganic O.filler of example 2 has an average particle size of 6 microns (tbl. 1).

15. Regarding claim 5, the hollow glass spheres have a specific gravity of 0.6 (tbl. 1).

16. Regarding claims 6-7 and 9, the courts have stated that a chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical or substantially identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655, (Fed. Cir. 1990). See also *In re Best*, 562 F.2d 1252, 195 USPQ 430, (CCPA 1977). "Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established." Further, if it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

17. In light of the above, Daichou anticipates in the aforementioned claims.

18. Claims 1 and 4-9 are rejected under 35 U.S.C. 102(a) as being anticipated by Daichou *et al* (US 2004/0085772 A1).

19. It is noted that since Daichou '772 also qualifies as an "intervening reference" (MPEP 201.15); therefore a rejection under subsection (a) of 35 USC 102 is warranted.

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20. Discussion relating to the merits of this rejection can be found in paragraphs 12-17 above and is hereby incorporated into this rejection by reference.

21. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

### ***Claim Rejections - 35 USC § 103***

22. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

23. The U.S. Supreme Court supplied seven rationales in *KSR International v. Teleflex Inc.* (550 USPQ2d 1385) that, by following the factual inquiries set forth in *Graham v. John Deere Co.* (383 U.S. 1, 148 USPQ 459 (1966)), establish a *prima facie* case of obviousness. The rationales are:

- (a) Combining prior art elements according to known methods to yield predictable results;
- (b) Simple substitution of one known element for another to obtain predictable results;
- (c) Use of known technique to improve similar devices (, methods, or products) in the same way;
- (d) Applying a known technique to a known device (, method, or product) ready for improvement to yield predictable results;
- (e) “Obvious to try” – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
- (f) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art;

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- (g) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teaches to arrive at the claimed invention.

The examiner notes that the above rationales are merely exemplary. For more information, see MPEP §2141.

24. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daichou *et alii* (US 2004/0085772 A1) in view of Alger (Polymer Science Dictionary).

25. Discussion regarding Daichou above in paragraphs 12-17 is hereby incorporated into this rejection by reference.

26. Daichou teaches using either styrene or diallyl phthalate for the crosslinking agent (par. 29), but it does not teach the applicant's claimed range of the two in proportion to each other.

27. Alger teaches:

"The monomer [, diallyl phthalate,] is sometimes used to replace styrene in the crosslinking of unsaturated polyester resins to give products with greater heat resistance."

28. Further, one of ordinary skill in the art would expect the crosslinking density to increase with diallyl phthalate compared to styrene owing to the number of unsaturated sites. Therefore, one has motivation to substitute part of the styrene crosslinking agent in Daichou with an amount of diallyl phthalate proportional to the amount of heat resistance and crosslinking density—which one of ordinary skill in the art would expect to contribute to hardness—gained. Therefore, it would have been obvious at the time of the invention for one of ordinary skill in the art to replace part of the styrene in Daichou

with an amount appropriate to optimize the heat resistance and cross-linking density of the resultant crosslinked polyester.

29. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daichou *et alii* (US 2004/0085772 A1) in view of Wada *et alii* (US 4,052,358).

30. Daichou only limits the polyester in that the glass transition temperature of the crosslinked polyester should be at least 150 °C (par. 29). Therefore, Daichou is open to using virtually any unsaturated polyester.

31. Wada teaches an unsaturated polyester resin that exhibits low-shrinkage, excellent colorability, workability, and storage stability, and is useful making bulk molding compounds (ti.; c. 5, II. 3-42). From examples 2a-2d, one can extract the following formulation: 100 parts polybasic monomers, comprising 30-70 wt. % neopentyl glycol, 5-55 wt. % propylene glycol, and 10-30 wt. % hydrogenated bisphenol A; and 100 parts polyacidic monomers, comprising 100% maleic anhydride or fumaric acid.

32. Given the aforementioned benefits, one of ordinary skill in the art would have motivation to select Wada as the unsaturated polyester to use in Daichou. This combination of Wada in view of Daichou gives an unsaturated polyester composition whose formulation overlaps with the instant claims'. The claimed range would have been obvious to one having ordinary skill in the art at the time the invention was made, since it has been held that claiming an overlapping portion of the range taught in the prior is a *prima facie* case of obviousness. See *In re Malagari*, 182 USPQ 549 and MPEP 2144.05 (I). Therefore, it would have been obvious at the time of the invention

for one of ordinary skill in the art to substitute Wada's polyester into Daichou to enhance the physical properties of Daichou, thereby arriving at the instant claims.

***Response to Arguments***

33. Applicant's arguments, see pp. 5-6, filed September 8, 2008, with respect to the rejection(s) of claim(s) 1 and 3-9 under Yamane *et alii* (JP 2001/261954 A) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Daichou *et alii* (US 2004/0085772 A1). See above.

***Examiner's Contact Information***

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James W. Taylor II whose telephone number is (571) 270-5457. The examiner can normally be reached on 7:30 am to 5:00 pm (off every other Friday).

35. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

36. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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